



**IN THE MATTER OF  
United States of America  
Patent Application No.  
09/341,299 in the name of  
VERONICA ROBINSON**

**RECEIVED**  
JUL 23 2002  
TC 1700

**DECLARATION UNDER 37CFR1.132**

I, **VERONICA TOWNSEND**, formerly **VERONICA ROBINSON**, of 11 McAlpine Retreat, Kinross, Western Australia, 6028, AUSTRALIA, hold the position of Managing Director with **LICEBUSTERS INTERNATIONAL R & D PTY LTD** of Unit 5, No. 1 Townsend Street, Malaga, Western Australia, 6090, AUSTRALIA, the Assignee of the above referenced application, and I give this evidence from company records and personal knowledge.

1. I hold a Diploma in Chemical Technology from West Bromwich Technical College, United Kingdom.
2. I am the inventor of the invention which is the subject of the claims of US Patent Application No. 09/341,299 ("The Application").
3. The invention which is the subject of the Application as defined in claims proposed at an interview with the Examiner on 24 January 2002 includes the feature of a carrier composition including a mixture of wax and an insect repellant, the insect repellant being present in an amount which is non-toxic to a person, but sufficient to treat and prevent infestation of lice and other parasitic insects on a person.
4. Attached hereto and marked Exhibit VT-1 is a copy of the Application as filed. On page 6, lines 25 to 30 of the Application it is stated that a suitable amount of pyrethrum for killing lice is 0.5 to 6.0% by volume of the total carrier composition. I confirm that this amount of pyrethrum is sufficient to treat and prevent infestations of lice and other parasitic insects on a person. I also confirm that the amount is non-toxic to a person.
5. Attached hereto and marked Exhibit VT-2 is a copy of an article dated August 1996 ("The Article") appearing in US publication "Happi". Happi is a magazine which is published monthly for people involved in the personal care, household, industrial and institutional fields. The article is entitled "Pyrethrum: A Safe and Effective Natural Insecticide".
6. The Article states on page 47, column 1, lines 17 to 27:

**“Pyrethrum production is expected to significantly increase during the next five years due to its proven effectiveness and safety record and also consumer preference for natural products.**

**Pyrethrum is a contact insecticide with a very good human and animal safety record. It is generally recognised to be one of the least toxic of all the natural domestic insecticides.”**

- 7. The Article discusses the safety and toxicity of pyrethrum in a passage on page 48, column 3, line 20 to page 49, column 1, line 3. This passage states that there is no clear evidence of chronic poisoning in humans over many years of manufacture and use. The passage also states that the US Environmental Protection Agency (EPA) has carried out a safety investigation into the use of pyrethrums using a natural pyrethrum extract containing 57.6% of pyrethrins. The passage states that pyrethrum extract has a low order of toxicity and is unlikely to cause skin and eye irritation or sensitivity and that:**

**“In fact, all tests to date indicate and support earlier views that insecticides containing pyrethrum extracts present very few risks to humans or animals”.**

- 8. In my view, the Article indicates that the use of pyrethrum in an amount within the range 0.5% to 6.0% by volume, being significantly less than amount of natural pyrethrum extract used in the EPA safety investigation referred to in paragraph 7 above, is non-toxic to a person.**
- 9. In June 1997, I carried out tests to establish the effectiveness of pyrethrum when used in an amount within the range 0.5% to 6.0% by volume. The tests involved producing an insect repellant substrate attached to a garment to be worn by a person, the substrate including a mixture of wax and pyrethrum in an amount within the range 0.5% to 6.0% by volume and providing each child of a group of 26 children at my daughter’s school with one of the garments. The tests also involved producing such garments with pyrethrum in amounts outside the range 0.5% to 6.0% by volume.**
- 10. The testing indicated that the use of pyrethrum in an amount within the range 0.5% to 6.0% by volume is particularly effective in treating and preventing infestations of lice and other parasitic insects.**
- 11. None of the children included in the tests experienced any adverse effects as a result of carrying out the test.**
- 12. Garments including an insect repellant substrate having a mixture of wax and pyrethrum in an amount within the range 0.5% to 6.0% by volume (“the Garments”) have been sold in the**

United States since 1998.

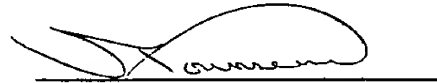
13. The Garments have been sold in Australia since 1997.
14. Attached hereto and marked Exhibit VT-3 is a copy of a label for a Garment and a copy of a letter from the Australian Therapeutic Goods Association (TGA) which indicates that approval has been given to use a label in relation to garments sold which claim that the Garment prevents infestation of lice.
15. Attached hereto and marked Exhibit VT-4 is a copy of a letter dated 8 June 1998 from Lea Hadley, principal of Tranby Primary School of Riverdale, Western Australia, in support of my claim that the Garments are effective in treating and preventing infestation of lice and other parasitic insects on a person and that an amount of pyrethrum in an amount within the range 0.5% to 6.0% is non-toxic to a person. I confirm that the headbands and cap inserts referred to in the letter include an insect repellent substrate having an amount of pyrethrum within the range 0.5% to 6.0% by total volume.
16. Attached hereto and marked Exhibit VT-5 is a copy of a letter from Chris Wells, pharmacist and proprietor of Scarborough Beach Pharmacy, Scarborough, Western Australia in support of my claim that the Garments are effective in treating and preventing infestation of lice and other parasitic insects on a person and that an amount of pyrethrum in an amount within the range 0.5% to 6.0% is non-toxic to a person. I confirm that the products referred to in the letter include an insect repellent substrate having an amount of pyrethrum within the range 0.5% to 6.0% by total volume.
17. Attached hereto and marked Exhibit VT-6 is a copy of a letter from Barry Tucker, Optometrist of Ballajura Optometrists, Ballajura, Western Australia, in support of my claim that the Garments are effective in treating and preventing infestation of lice and other parasitic insects on a person and that an amount of pyrethrum in an amount within the range 0.5% to 6.0% is non-toxic to a person. I confirm that the products referred to in the letter include an insect repellent substrate having an amount of pyrethrum within the range 0.5% to 6.0% by total volume.
18. Attached hereto and marked Exhibit VT-7 are copies of correspondence received from customers in support of my claim that the Garments are effective in treating and preventing infestation of lice and other parasitic insects on a person and that an amount of pyrethrum in an amount within the range 0.5% to 6.0% is non-toxic to a person. I confirm that the products referred to in the correspondence include an insect repellent substrate having an amount of pyrethrum within the range 0.5% to 6.0% by total volume.

19. Attached hereto and marked Exhibit VT-8 is a copy of an article appearing in an Australian Newspaper in support of my claim that the Garments are effective in treating and preventing infestation of lice and other parasitic insects on a person and that an amount of pyrethrum in an amount within the range 0.5% to 6.0% is non-toxic to a person. I confirm that the products referred to in the article include an insect repellent substrate having an amount of pyrethrum within the range 0.5% to 6.0% by total volume.
20. Attached hereto and marked Exhibit VT-9 is a copy of an article appearing in New Zealand Newspaper "Sunday Star-Times" in September 1998 in support of my claim that the Garments are effective in treating and preventing infestation of lice and other parasitic insects on a person and that an amount of pyrethrum in an amount within the range 0.5% to 6.0% is non-toxic to a person. I confirm that the products referred to in the article include an insect repellent substrate having an amount of pyrethrum within the range 0.5% to 6.0% by total volume.

I HEREBY DECLARE that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardise the validity of the application or any patent issued thereon.

Declared at Perth, Western Australia, on this 17<sup>th</sup>

Day of July 2002



VERONICA TOWNSEND

**IN THE MATTER OF**  
**United States of America**  
**Patent Application No.**  
**09/341,299 in the name of**  
**VERONICA ROBINSON**

**EXHIBIT VT-1**

PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION  
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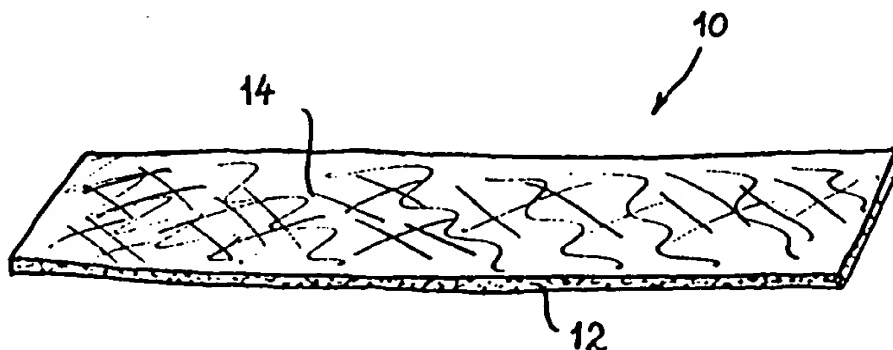
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(54) Title: INSECT REPELLENT SUBSTRATE FOR HEADWEAR

(57) Abstract

An insect repellent substrate (10) includes a fabric base material (12) made of felt which is impregnated with a repellent carrier composition (14). The carrier composition (14) includes a mixture of wax and a naturally occurring insect repellent such as pyrethrum oil. The carrier composition (14) may also include scented or aromatic oils such as citronella oil, rosemary oil, eucalyptus oil and neem oil. Strips of the fabric base material may be attached to headwear such as a headband or cap so that it is in contact with the wearer's hair or body. Active constituents of the carrier composition (14) provide effective treatment and prevention of headlice and other parasitic insects.



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INSECT REPELLENT SUBSTRATE FOR HEADWEARFIELD OF THE INVENTION

The present invention relates to an insect repellent substrate for repelling lice and the like insects, and relates particularly, though not exclusively, to headwear having a strip of said insect repellent substrate provided in connection therewith.

BACKGROUND TO THE INVENTION

Infestations of headlice and other parasitic insects are a perennial problem, particularly in schools where the lice are easily transmitted from child to child. Up to the present time there has been very little that one can do to prevent a child from being infected with headlice. Regular inspection to identify nits, which are the eggs of lice, is the only way to detect an infestation. Treatment includes combing the hair with a fine-toothed comb and/or washing the hair with a special shampoo which contains chemical substances designed to kill the lice and nits.

However, the shampoos that are currently available to treat headlice typically contain harsh synthetic chemicals such as permethrion, piperonyl butoxide and organophosphates which have been known to cause skin irritation. In the United Kingdom across the counter sales of shampoos containing organophosphates have recently been banned because of health concerns.

A further disadvantage with shampoos is that they only treat the hair at the time of use. They do not prevent the child from being re-infected when he/she returns to school.

SUMMARY OF THE INVENTION

The present invention was developed with a view to providing a lice repellent substrate suitable for headwear that can kill any lice present in the hair as well as preventing any further infestation of headlice. Although the present



invention will be described primarily in relation to the treatment and prevention of lice infestation, it is to be understood that it also has application to the treatment and/or prevention of infestations of other parasitic insects such as fleas. Furthermore, although the insect repellent substrate is particularly suitable for headwear it may also have applications such as, for example, under a pillow at night.

According to one aspect of the present invention there is provided an insect repellent substrate for repelling lice and the like insects, the substrate comprising:

a piece of fabric base material impregnated with a repellent carrier composition, the carrier composition including a mixture of wax and an insect repellent whereby, in use, the carrier composition provides a controlled release of the insect repellent from the fabric base material.

Preferably the insect repellent is a naturally occurring compound. More preferably the insect repellent includes an extract from the pyrethrum flower. Most preferably the insect repellent is pyrethrum oil. Advantageously the carrier composition further includes one or more scented or aromatic oils. More preferably the carrier composition includes citronella oil and rosemary oil, which are also mild insect repellents. Preferably the carrier composition further includes neem oil, a naturally occurring insect repellent.

Typically the wax is a paraffin wax. Alternatively, the wax is beeswax obtained from honeycomb of the bee.

Preferably the carrier composition includes between 0.5% to 6.0% by volume of pyrethrum. Preferably the carrier composition includes between 0.5% to 4.0% citronella oil. Preferably the carrier composition includes between 0.5% to

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5.0% rosemary oil. Preferably the carrier composition includes between 3.0% to 9.0% neem oil. Preferably the carrier composition also includes between 0.5% to 6.0% eucalyptus oil.

5 Most preferably the carrier composition includes 30 mls of pyrethrum (50% w/w), 20 mls of citronella, 25 mls of rosemary and 45 mls of neem oil to every one litre of wax. Preferably the fabric base material is a felt material; most preferably a polyester/cotton blend felt material.

10 According to another aspect of the present invention there is provided a method of manufacturing an insect repellent substrate for repelling lice and the like insects, the method comprising the steps of:

producing a repellent carrier composition by:

15 heating a wax to a liquid state; and,  
mixing an insect repellent with the liquid wax;

dipping a piece of fabric base material into the carrier composition whilst still in the liquid state for a  
20 sufficient length of time to allow the base material to absorb some of the carrier composition; and,

allowing the impregnated piece of base material to cool so that the carrier composition solidifies on the base material whereby, in use, the carrier composition provides a  
25 controlled release of the insect repellent from the fabric base material.

Preferably the insect repellent is a naturally occurring compound. More preferably the insect repellent includes an extract of the pyrethrum flower. Most preferably the insect  
30 repellent includes pyrethrum oil.

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Preferably the step of producing the repellent carrier composition further includes mixing one or more scented or aromatic oils with the liquid wax. Most preferably the scented oils include citronella oil and rosemary oil, which are also mild insect repellents.

Preferably the step of producing the carrier composition further includes mixing neem oil with the liquid wax.

According to a still further aspect of the present invention there is provided a garment having an insect repellent substrate for repelling lice and the like insects provided in connection therewith, the garment comprising:

a piece of fabric base material impregnated with a repellent carrier composition and attached to the garment in a manner that will ensure contact with the wearer's hair or body, the carrier composition including a mixture of wax and an insect repellent whereby, in use, the carrier composition provides a controlled release of the insect repellent from the fabric base material.

Typically the garment is an item of headwear such as, for example, a headband, hat or a cap. Alternatively the garment is an animal garment, such as, for example, a flea collar or a coat.

#### BRIEF DESCRIPTION OF THE DRAWINGS

In order to facilitate a better understanding of the nature of the invention a preferred embodiment of the insect repellent substrate will now be described in detail, by way of example only, with reference to the accompanying drawings, in which:

Figure 1 illustrates a typical piece of insect repellent substrate in accordance with the invention;

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Figure 2 illustrates a headband having a strip of the insect repellent substrate of Figure 1 attached thereto;

Figure 3 illustrates a strip of insect repellent substrate in accordance with the invention having a strip of hook and loop fastener material fixed thereto; and,

Figure 4 illustrates a baseball cap having several strips of the insect repellent substrate illustrated in Figure 3 attached thereto.

#### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

10 A preferred embodiment of the insect repellent substrate 10 as shown in Figure 1 comprises a piece of fabric base material 12 impregnated with a repellent carrier composition 14. Any suitable fabric base material may be employed. In the preferred embodiment the fabric base material is a felt material. A felt material made from a cotton and polyester blend was found to be most suitable. The fabric base material 12 should preferably be sufficiently absorbent to absorb the carrier composition 14 in a liquid state whilst retaining a degree of flexibility when impregnated with the carrier composition 14 in its solid state.

The repellent carrier composition 14 includes a mixture of wax and an insect repellent. In this embodiment the wax is a paraffin wax, although a naturally occurring wax such as beeswax obtained from honeycomb of the bee may also be used. The wax typically has a melting point of between 60°C to 65°C. The insect repellent employed in the carrier composition is preferably a naturally occurring compound. In the preferred embodiment the insect repellent includes an extract from the pyrethrum flower. Pyrethrins, the active constituent of pyrethrum flowers, are commonly used as a contact insecticide in fly-sprays. Pyrethrins are noted for the very rapid paralysis (knock-down) effect produced on flies, mosquitoes and other insects. Chemically modified

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pyrethrins, such as permethrins, have greater persistence and other commercially desirable properties. In the present invention, it is preferred to use the naturally occurring pyrethrum pale extract from pyrethrum flowers grown in Kenya. Typically, a diluted pyrethrum solution (50% w/w PBK) in an odourless isoparaffin solvent is used. Typically between 0.5% to 6.0% by volume of the pyrethrum oil solution is employed in the repellent carrier composition.

Advantageously the carrier composition 14 also includes one or more scented or aromatic oils. The addition of scented or aromatic oils is desirable in order to give the repellent carrier composition a pleasant aroma or scent. In addition, selected naturally occurring scented oils, such as citronella oil, rosemary oil and eucalyptus oil act as mild insect repellents and/or have other medicinal qualities. Thus, for example, rosemary oil is a mild insect repellent and is also thought to help to relieve headaches. Citronella oil also acts as an insect repellent and provides a fresh citrus aroma. It also helps to dry up congestion of the nasal passages. Eucalyptus oil is an antiseptic and eucalyptus vapours act to relieve congestion and breathing difficulties through the nasal passages.

The carrier composition preferably also includes neem oil extracted from the neem tree, which is a long-lasting insect repellent. Through extensive experimentation the inventor has found that the repellent carrier composition should preferably include a mixture of between 0.5% to 4.0% by volume citronella oil, 0.5% to 5.0% by volume rosemary oil and 3.0% to 9.0% neem oil together with 0.5% to 6.0% by volume of pyrethrum. These proportions were found to give the carrier composition sufficient active components to kill any lice or nits present, balanced with the repellent and aromatic properties of the constituents. A carrier composition which includes 30 mls of pyrethrum (50% w/w), 20 mls of citronella, 25 mls of rosemary and 45 mls of neem

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oil to every one litre of wax has been found to be particularly effective.

The wax in the carrier composition 14 provides a controlled release of the insect repellent from the fabric base material 12. In use, the base material 12 may be sewn on the inside of a garment in a manner that will ensure contact with the wearer's hair or body. For example, a strip 16 of the insect repellent substrate may be sewn to the inside of a headband 18 as shown in Figure 2. Strips of the impregnated felt material are cut to various sizes, ranging from 20 cm to 24 cm in length and from 2.5 cm to 5.0 cm in width, are sewn into stretchy cotton fabric to form the headband. Alternatively, strips of the impregnated felt may be sewn onto or adhered to an existing headband. When the headband 18 is worn on the wearer's head the strip 16 of insect repellent substrate will be in contact with the wearer's hair. The body temperature of the wearer will cause the wax in the substrate to soften allowing the active and aromatic constituents of the repellent carrier composition to be slowly released onto the wearer's hair and scalp. The controlled and continuous release of active constituents onto the wearer's hair and scalp not only kills any existing headlice and/or nits but also prevents any further infestation. In use, the strip 16 of insect repellent substrate has been found to provide effective treatment and prevention of headlice for approximately 6 to 8 weeks. After this length of time most of the active constituents of the repellent carrier composition are found to have leached out or evaporated from the fabric base material.

The insect repellent substrate 10 is relatively simple and inexpensive to manufacture. Typically, strips of the felt material are cut to size and dipped in a preheated (to approximately 70°C) wax solution containing the pyrethrum, citronella, rosemary and neem oil in the proportions noted above. The pyrethrum oil, citronella oil, rosemary oil and

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neem oil are simply added to the melted wax and readily mix with the wax in view of their oily composition. The felt strips absorb the wax solution after two or three minutes and then the impregnated felt strips are allowed to cool so that the wax solution solidifies on the felt fabric. After approximately two minutes of cooling the impregnated felt strips are ready to be attached to any suitable garment. The strips of insect repellent substrate may be attached to the garment using any appropriate fastening, for example, by sewing, an adhesive or using a hook and loop fastener system such as Velcro (registered trade mark).

Figure 3 illustrates a strip 20 of the insect repellent substrate having a strip of hook and loop fastener material 22 fixed thereto. One part of the hook and loop fastener is glued to the felt base material 10 and the other part can be attached to a garment by sewing or using a suitable self-adhesive. A baseball cap 24 is illustrated in Figure 4 (shown upside down) having several strips 20 of the insect repellent substrate attached to an inside surface of the cap where they will be in direct contact with the hair and/or scalp of the wearer. Similar strips of the insect repellent substrate can be attached to suitable animal garments, such as a flea collar worn by pet dogs and cats or on the bridle or protective coat worn by horses, sheep and other livestock. In this connection, the repellent properties of the active constituents of the repellent carrier composition have also been found to repel flies and mosquitoes.

A piece of the insect repellent substrate 10 may also be used as a "night breather" to reduce congestion and aid breathing during sleep. A carrier composition containing 30 mls by volume of citronella, 20 mls by volume of rosemary, 30 mls by volume of eucalyptus and 5 mls by volume of pyrethrum to every litre of wax, has been found particularly effective as a night breather. A piece of the insect repellent substrate approximately 20 cm x 14 cm is placed in the pillowcase or

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under the bottom sheet next to the mattress at the head of the bed. The night breather has also been found to relieve snoring in many cases. In this application, the insect repellent substrate 10 may also act to treat and prevent bed infestations of lice, fleas and dust mite.

Now that a preferred embodiment of the insect repellent substrate has been described in detail, it will be apparent that it has several advantages over the prior art methods of treating headlice, including but not limited to the following advantages:

- (a) it provides immediate treatment as well as long-lasting prevention;
- (b) the naturally occurring repellents employed are less hypo-allergenic and more environmentally friendly than the prior art synthetic compounds;
- (c) the scented or aromatic oils produces a fresh herbal aroma;
- (d) it is relatively simple and inexpensive to manufacture; and,
- (e) it is inconspicuous and can be easily attached to commonly worn headwear by children, who are particularly self-conscious about such things.

Numerous variations and modifications to the described embodiment will suggest themselves to persons skilled in the art, in addition to those already described, without departing from the basic inventive concepts. For example, other types of suitable fabric base material may be employed. All such variations and modifications are to be considered within the scope of the present invention, the nature of which is to be determined from the foregoing description and



the appended claims.

THE CLAIMS DEFINING THE PRESENT INVENTION ARE AS FOLLOWS:

1. An insect repellent substrate for repelling lice and the like insects, the substrate comprising:

5 a piece of fabric base material impregnated with a repellent carrier composition, the carrier composition including a mixture of wax and an insect repellent whereby, in use, the carrier composition provides a controlled release of the insect repellent from the fabric base material.

10 2. An insect repellent substrate as defined in claim 1, wherein the insect repellent is a naturally occurring compound.

3. An insect repellent substrate as defined in claim 2, wherein the insect repellent includes an extract from the pyrethrum flower.

15 4. An insect repellent substrate as defined in claim 3, wherein the insect repellent is a pyrethrum solution.

5. An insect repellent substrate as defined in claim 1, wherein the carrier composition further includes one or more scented or aromatic oils.

20 6. An insect repellent substrate as defined in claim 5, wherein the carrier composition includes citronella oil and rosemary oil, which are also mild insect repellents.

25 7. An insect repellent substrate as defined in claim 2, wherein the carrier composition further includes neem oil, a naturally occurring insect repellent.

8. An insect repellent substrate as defined in claim 1, wherein the wax is a paraffin wax.

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9. An insect repellent substrate as defined in claim 4, wherein the carrier composition includes between 0.5% to 6.0% by volume of pyrethrum.

5 10. An insect repellent substrate as defined in claim 9, wherein the carrier composition includes between 0.5% to 4.0% citronella oil.

11. An insect repellent substrate as defined in claim 10, wherein the carrier composition includes between 0.5% to 5.0% rosemary oil.

10 12. An insect repellent substrate as defined in claim 11, wherein the carrier composition includes between 3.0% to 9.0% neem oil.

15 13. An insect repellent substrate as defined in claim 12, wherein the carrier composition also includes between 0.5% to 6.0% eucalyptus oil.

14. An insect repellent substrate as defined in claim 13, wherein the carrier composition includes 30 mls of pyrethrum (50% w/w), 20 mls of citronella, 25 mls of rosemary and 45 mls of neem oil to every one litre of wax.

20 15. An insect repellent substrate as defined in claim 1, wherein the fabric base material is a felt material.

16. An insect repellent substrate as defined in claim 15, wherein the fabric base material is a polyester/cotton blend felt material.

25 17. A method of manufacturing an insect repellent substrate for repelling lice and the like insects, the method comprising the steps of:

producing a repellent carrier composition by:

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heating a wax to a liquid state; and,  
mixing an insect repellent with the liquid  
wax;

dipping a piece of fabric base material into the  
5 carrier composition whilst still in the liquid state for a  
sufficient length of time to allow the base material to  
absorb some of the carrier composition; and,

allowing the impregnated piece of base material to  
cool so that the carrier composition solidifies on the base  
10 material whereby, in use, the carrier composition provides a  
controlled release of the insect repellent from the fabric  
base material.

18. A method of manufacturing an insect repellent  
substrate as defined in claim 17, wherein the insect  
15 repellent is a naturally occurring compound.

19. A method of manufacturing an insect repellent  
substrate as defined in claim 18, wherein the insect  
repellent includes an extract of the pyrethrum flower.

20. A method of manufacturing an insect repellent  
20 substrate as defined in claim 19, wherein the insect  
repellent includes a pyrethrum solution.

21. A method of manufacturing an insect repellent  
substrate as defined in claim 17, wherein the step of  
producing the repellent carrier composition further includes  
25 mixing one or more scented or aromatic oils with the liquid  
wax.

22. A method of manufacturing an insect repellent  
substrate as defined in claim 21, wherein the scented oils  
include citronella oil and rosemary oil, which are also mild  
30 insect repellents.

- 14 -

23. A method of manufacturing an insect repellent substrate as defined in claim 17, wherein the step of producing the carrier composition further includes mixing neem oil with the liquid wax.

5 24. A garment having an insect repellent substrate for repelling lice and the like insects provided in connection therewith, the garment comprising:

10 a piece of fabric base material impregnated with a repellent carrier composition and attached to the garment in a manner that will ensure contact with the wearer's hair or body, the carrier composition including a mixture of wax and an insect repellent whereby, in use, the carrier composition provides a controlled release of the insect repellent from the fabric base material.

15 25. A garment having an insect repellent substrate as defined in claim 24, wherein the garment is an item of headwear.

1/2

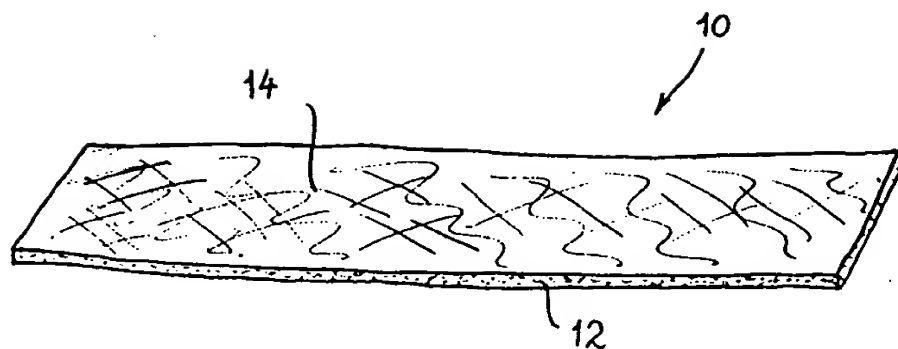


FIG. 1.

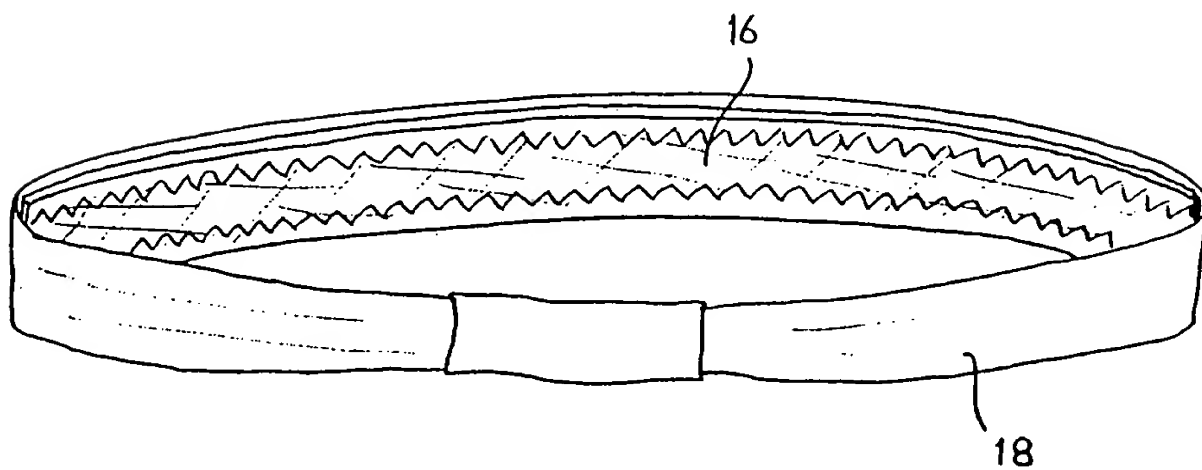


FIG. 2.

2/2

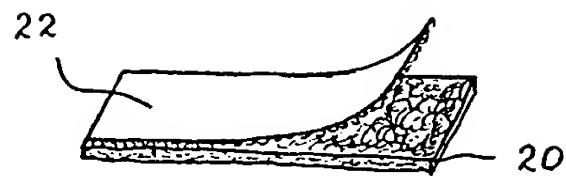


FIG. 3.

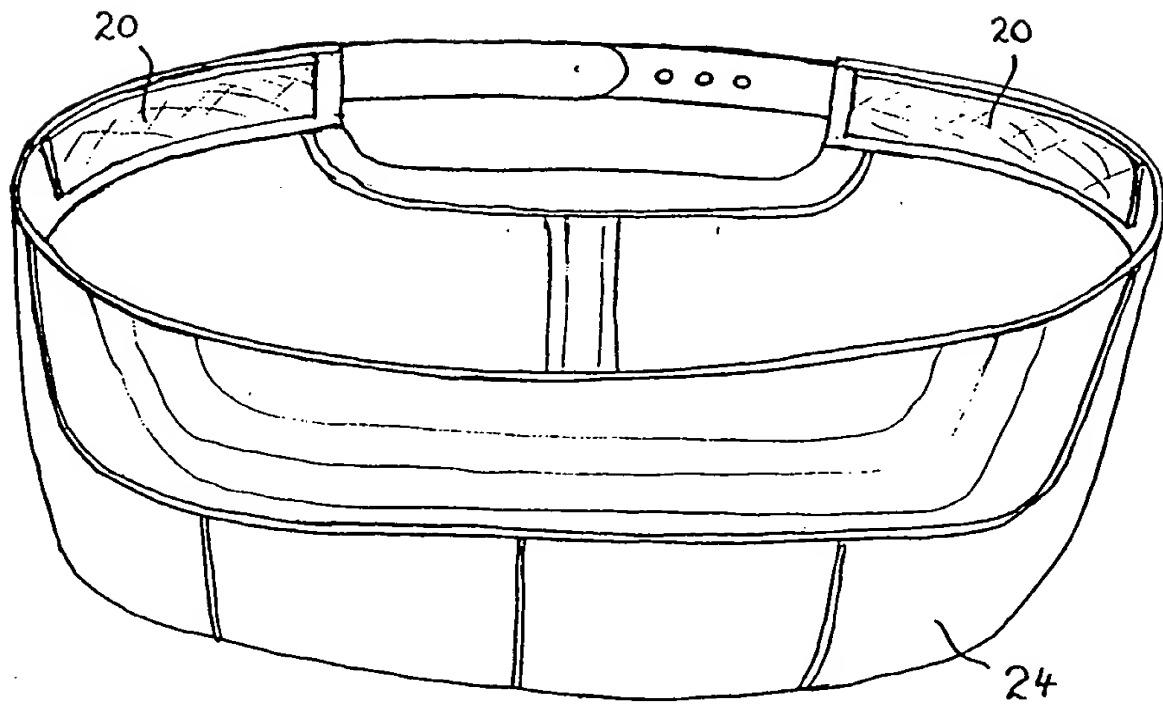


FIG. 4.

## INTERNATIONAL SEARCH REPORT

 International Application No.  
**PCT/AU 98/00010**

<b>A. CLASSIFICATION OF SUBJECT MATTER</b>		
Int Cl <sup>6</sup> : A45D 8/36, A41D 20/00		
According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b>		
Minimum documentation searched (classification system followed by classification symbols) IPC A45D 8/36, A41D 20/00, A01K 27/00, A01K 13/00, A01M 1/20, C11C 5/00		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched AU: IPC as above		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) WPAT: (INSECT OR REPEL:) AND WAX: JAPIO: (INSECT OR REPEL:) AND WAX:		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y Y	Derwent Abstract Accession No. 84-303057/49, Class P14 JP 59-187722 A (EARTH SEIYAKU KK) 24 November 1984	1-4, 8-9, 15-20 5, 10, 13, 21, 24 24, 25
X Y	Derwent Abstract Accession No. 84-051553/09, Class P14P32 JP 59-008956 A (EARTH SEIYAKU KK) 18 January 1984	1-4, 8-9, 15-20, 24, 25 5, 10, 13, 21, 24
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C <input type="checkbox"/> See patent family annex		
* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "I" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family		
Date of the actual completion of the international search 10 February 1998		Date of mailing of the international search report <b>25 FEB 1998</b>
Name and mailing address of the ISA/AU AUSTRALIAN INDUSTRIAL PROPERTY ORGANISATION PO BOX 200 WODEN ACT 2606 AUSTRALIA Facsimile No.: (02) 6285 3929		Authorized officer <b>EDWARD MILLER</b> Telephone No.: (02) 6283 2188



## INTERNATIONAL SEARCH REPORT

International Application No.

PCT/AU 98/00010

C (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y		24, 25
Y	US 5465689 A (WINDER) 14 November 1995 column 2 line 63 - column 3 line 22	5, 10, 13, 21, 24
Y	Derwent Abstract Accession No. 97-038432/04, Class P21 JP 08-296171 A (FUKUSUKE CORP) 12 November 1996	24, 25

**IN THE MATTER OF**  
**United States of America**  
**Patent Application No.**  
**09/341,299 in the name of**  
**VERONICA ROBINSON**

**EXHIBIT VT-2**

# Pyrethrum:

## A Safe and Effective Natural Insecticide

Interest is growing for this naturally-derived insecticide due to its unique properties and safety profile. Pyrethrum production is expected to significantly increase during the next five years.

By George R. Whalley  
EUROPEAN EDITOR AND CONSULTANT

**P**YRETHRUM IS AN INSECTICIDE which is obtained from dried, daisy-like flowers of the *Chrysanthemum cinerariaefolium*, whose active components are known collectively as pyrethrins. The insecticidal use of pyrethrum flowers probably originated in Persia and Dalmatia, with its introduction into Europe and the U.S. during the latter part of the 19th century.

The flowers are commercially grown in various tropical countries, particularly Kenya, India, Papua New Guinea and Australia. Kenya is the largest supplier in the world. Pyrethrum production is expected to significantly increase during the next five years due to its proven effectiveness and safety record and also consumer preference for natural products.

Pyrethrum is a contact insecticide with a very good human and animal safety record. It is generally recognized to be one of the least toxic of all the natural domestic insecticides. It boasts a rapid knockdown effect and has broad spectrum activity against many insects because its active constituents contain more than one molecular species. The knockdown effect and killing power of pyrethrins and the synthetic pyrethroids are due to their ability to interfere with the insect's nervous system.

Pyrethrum is readily degraded by exposure to air and sunlight, so it is not subject to the problems of persistence so often exhibited by many other commercial insecticides. These and other attributes have led to the widespread use of pyrethrum insecticides for various household, agricultural and industrial purposes.

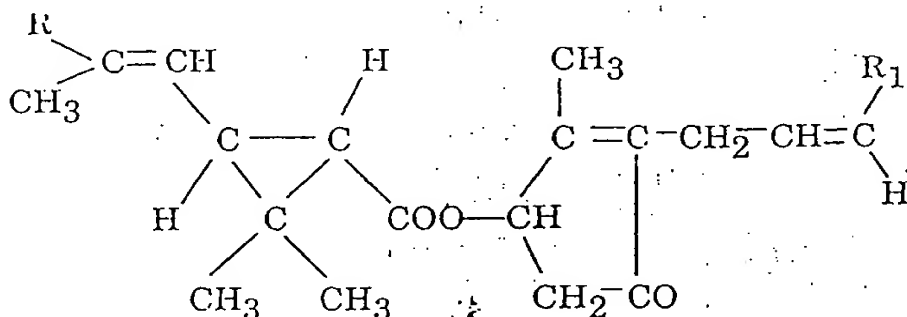
### Pyrethrins Production

The active plant constituents are called pyrethrins. Actives are distributed throughout the whole plant, with the greatest concentration located in the flower head. Flowers are harvested at a stage when the petals are essentially horizontal, since this is when the maximum pyrethrins concentration occurs. Harvested flower heads are then sun or machine dried to a water content of about 10%. The powdered flowers are extracted with a light, aliphatic solvent. The solvent is subsequently "flashed-off" to produce a dark, oleo-resin concentrate containing about 30% of the active material. The crude concentrate is usually further diluted and

standardized to produce an oleo-resin extract that contains 20-25% of active pyrethrins. Such extracts may contain additional materials such as sesquiterpenes, flavonoids, triterpinols, sterols, n-alkanes, carotenoids and various fatty acids.

Refined, de-waxed and de-colored extract concentrates are also commercially available. A high-active, refined pyrethrum concentrate, containing 50-60% pyrethrins is available as well. The addition of an antioxidant such as butylated hydroxytoluene (BHT) is usually added to the extracts to prevent oxidation. New extraction methods are currently being investigated. One method uses carbon dioxide in a

### Structural Formulas of Pyrethrins



where:

Pyrethrin I	R <sub>1</sub> is CH:CH <sub>2</sub>	R is CH <sub>3</sub>
Pyrethrin II	R <sub>1</sub> is CH:CH <sub>2</sub>	R is COO CH <sub>3</sub>
Cinerin I	R <sub>1</sub> is CH <sub>3</sub>	R is CH <sub>3</sub>
Cinerin II	R <sub>1</sub> is CH <sub>3</sub>	R is COO CH <sub>3</sub>
Jasmolin I	R <sub>1</sub> is CH <sub>2</sub> CH <sub>3</sub>	R is CH <sub>3</sub>
Jasmolin II	R <sub>1</sub> is CH <sub>2</sub> CH <sub>3</sub>	R is COO CH <sub>3</sub>

super-critical fluid extraction procedure to reduce the exposure of the extract to heat during solvent removal. Relatively smaller quantities of finely powdered pyrethrum powders are also available for the production of insecticidal dusts and mosquito coils.

### Actives and Synergists

All insecticidal pyrethrins found in pyrethrum extracts are esters. They are formed by the reaction of two acids, chrysanthemic acid and pyrethric acid, with three alcohols: cethrolone, cinerolone and jasmolone. The chrysanthemic acid esters are known as pyrethrin I, cinerin I and jasmolin I, known collectively as the Pyrethrins fraction I and esters of pyrethric acids. Pyrethrin II, cinerin II and jasmolin II, are known as the pyrethrins fraction II. These six compounds and their individual configurations provide both insecticidal and knockdown activity of pyrethrum flowers and their extracts.

Different growing conditions, locations and plant clones cause variations in the composition of the individual insecticidal pyrethrins. However, within a particular location, and over a significant time period the composition tends to be fairly consistent. The ratio of pyrethrins I to pyrethrins II is also maintained. This is an important aspect, since the pyrethrins II fraction has a greater knock down effect than the pyrethrins I fraction, which has greater killing power.

A synergist is an essentially non-toxic material that, when added to an insecticide, significantly increases its killing power. Its effectiveness is usually expressed as the ratio of the LD<sub>50</sub> of the insecticide to that of the insecticide and synergist.

Many pyrethrum synergists have been discovered. They include sesamin, sesamol, piperonyl butoxide, tropital, bucarpolate, sesamex, safroxane, piperonyl cyclonene and sulfoxide. All of these compounds contain the methylene-dioxyphenol group in their molecular structure. Other effective synergists not containing this moiety include commercial preparations such as MGK 264, SKF 500 and octochlorodipropyl ether. Synergism is also exhibited by other insecticides, including the synthetic pyrethroids such as tetra-

**Different growing conditions, locations and plant clones cause variations in the composition of the individual insecticidal pyrethrins.**

methrin, resmethrin and allethrin.

Piperonyl butoxide, butyl-3, 4-methylenedioxy-6-propylbenzene-diethylene glycol ether, sulfoxide (1,2-methylenedioxy-4-[2-octylsulfinyl] propyl) benzene, tropital (piperonal bis [2-(2-n-butoxyethoxyethyl) acetal], and bucarpolate (ester of piperonylic acid and the mono-n-butyl ether of diethylene glycol) have all been used as pyrethrum synergists, as have commercial compounds such as MGK 264 and Synepirin 500. But today piperonyl butoxide and MGK 264 are the major synergists for both natural pyrethrins and the synthetic pyrethroids. These relatively inexpensive synergists have enabled for-

mulators to lower concentrations of the more expensive natural pyrethrin, yet still produce effective products that cost less.

Synergists seem to inhibit the detoxification of pyrethrins by the insect's own biochemical, self-protective mechanisms. Insects' ability to de-toxify pyrethrins varies, so different quantities of synergist and pyrethrin are usually required for different insect species. Adult mosquitoes, for example, have a poor ability to destroy pyrethrins and therefore require a low level of insecticide and synergist. Houseflies, however, more readily destroy pyrethrins and consequently require higher dosage levels.

### Safety and Toxicity

Throughout its widespread use, pyrethrum has generally been considered to be a safe insecticide. There is no clear evidence of any chronic poisoning in humans over many years of manufacture and use. Such general statements, widely accepted in the past, have been the subject of a 10-year safety investigation requested by the United States Environmental Protection Agency (EPA) for additional data to support the re-registration of all pesticides. Those concerned with the manufacture and use of pyrethrum products formed a consortium to obtain comprehensive data to meet EPA requirements. A natural pyrethrum extract, containing 57.6% of pyrethrins, having a pyrethrins I to pyrethrins II ratio of 1.58 was used as the reference sample.

The results of these studies, using state-of-the-art procedures, indicate that pyrethrum extract has a low order of toxicity and is unlikely to cause skin and eye irritation or sensitization. It does not act as a teratogen or reproductive toxin and has a low potential to cause tumors in mammals. In fact, all the tests to date indicate and support earlier views that insecticides containing pyrethrum extracts present very few risks to humans or animals.

Ecotoxicological and environmental effects of pyrethrum have also been re-examined in light of the EPA requirements and the results indicate that when correctly applied, pyrethrum insecticides have little adverse effect on wildlife and no long term adverse activity on the environment. Because of its rapid dissipa-



GEORGE R. WHALLEY, who has years of experience in the production of soaps and detergents, is consulting from his headquarters at 8 Albany Drive, St. Peter's Road, Bury Lancs BL9 9RD, England. Phone and fax: (44) 161 764 6281.

Pyrethrum does not appear to remain in the soil 24 hours after its application.

#### Availability and Applications

Pyrethrum powder, as well as crude and refined pyrethrum concentrates, are obtained in various qualities from suppliers in different countries. But the world's largest producer, The Pyrethrum Board of Kenya, supplies pyrethrum as a crude oleo-resin extract that contains 25% pyrethrins in an odorless isoparaffinic solvent. The material is suitable for agricultural sprays and mosquito coils. A similar, but partially refined concentrate is also available; it can be used in fly sprays and other insecticides. A fully refined, decolorized and deodorized pale extract, at 25% and 50% pyrethrins content, is available for insecticidal aerosols and similar preparations.

A commercial pyrethrum powder, containing 1.3% pyrethrins, is used for the formulation of insecticidal dusts and mosquito coils. Additionally, there is available a special mosquito coil powder containing 0.6% pyrethrins.

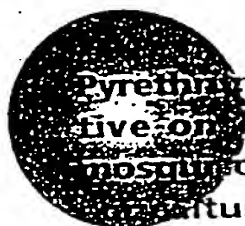
Pyrethrum marc is a coarse or fine powder which is obtained by grinding dried flowers after solvent extraction. This material can contain about 0.1% of residual pyrethrins and may also be used for mosquito coil manufacture. The finely ground material has good burning properties with a pleasant aroma.

Household sprays and aerosols must be oil-based because pyrethrins are only soluble in non-polar solvents. Suitable solvents include various petroleum fractions with low aromatics content. Odorless kerosene or commercial iso-paraffins are the preferred non-polar solvents. Industrial sprays are usually diluted with a light mineral oil. Mists or fogs can be produced with a heavier oil and in cases involving the treatment of foodstuffs, certain edible oils can be used.

Water-based products are also available, but due to their water insolubility, the pyrethrum extracts have to be solubilized or emulsified with surfactants. Water-based products are becoming more popular because of legislative pressures to reduce levels of VOCs (volatile organic compounds) entering the atmosphere. There is also a continuing

consumer demand for "safer" products. Water-based products also have the advantages of low odor and flammability and leave a less oily residue.

Due to the presence of ester groups in all natural pyrethrins, products cannot have high pH values. This makes the use of conventional soap-type emulsifiers inadvisable. Ethoxylated anionic and nonionic surfactants can, however, be used to produce fairly stable oil-in-water emulsions. Micro-emulsions are also used. Pyrethrins are fairly tolerant toward lower pH values, but are incompatible with metals such as



**Pyrethrum is also effective on fleas, lice and mosquitoes, and it has agricultural applications as well.**

lead, brass, copper, zinc and iron, particularly in the case of water-based preparations.

#### General Household Products

When used in the home as pressure or aerosol sprays, pyrethrum-containing products are safe and effective insecticides against most types of flying insects. They are particularly effective against houseflies and mosquitoes, because of their fast knockdown and good toxicity. There is an added advantage to using pyrethrum-based products on houseflies: Pyrethrum rapidly paralyzes the insects and makes them fly toward daylight, out windows and away from food preparation or storage areas.

Aerosols and pressure sprays containing pyrethrum are also used against cockroaches, fleas, ants and similar crawling insects. An advantage of using pyrethrum-based products against cockroaches is their ability to rapidly bring cockroaches out of their daytime hiding places. This indicates product efficacy to the consumer. Pyrethrum preparations may also be used around the outside of the house and in the garden to destroy pests on flowers and vegetables. When used in or around the house, it

is usually recommended that these products should not be used in the immediate vicinity of fish and other aquatic life.

#### Other Uses for Pyrethrum

Pyrethrum is also effective on fleas, lice and mosquitoes, and it has agricultural applications as well. The flea is a very adaptable parasite; both man and domesticated pets, such as cats and dogs, are suitable hosts. A flea has a four-stage life cycle, passing from egg to larva to pupa to adult; a process which takes about four weeks. After consuming blood from the host, the adult female can lay sev-

eral hundred eggs in the course of a few days. The eggs fall from the host and the larvae soon hatch. Adult fleas spend most of their time on the ground or in carpets. They only attach themselves to a host for feeding. This period occupies only about 10% of their life span. The adult stage is the best time to eradicate this undesirable parasite. A liquid or powder preparation containing 0.2% of pyrethrins and 1% piperonyl butoxide is usually quite effective.

The inclusion of 0.25% of a suitable insect growth regulator, such as methoprene, is beneficial because it inhibits egg hatching and larva development.

Lice are only parasitic toward mammals and their occurrence in man, particularly as head lice in children, is quite socially unacceptable. Other types of body lice also exist. Lice infestation is readily transferred from one individual to another by direct contact or by the use of commonly shared articles such as combs, brushes or clothing. If left unchecked, lice infestation can reach epidemic proportions, especially in hospitals, schools or similar institutions. The development cycle of the louse is about four weeks. From the egg (called nits) stage to the adult stage, the louse passes through three nymph stages. Pyrethrum is frequently used to control lice infections. It can be incorporated in a powder, an aqueous cosmetic lotion or a shampoo.

Mosquito coils are slow-burning pyrethrum-containing products that create an aromatic, insecticidal smoke. These coils kill mosquitoes, houseflies and other flying insects and keep them from feeding in areas where the coils are burning. The

7/

pyrethrum powder is often used as a binder for the insecticide. The organic filler can be ground pyrethrum leaves, male or spent flowers (after solvent extraction), sawdust, powdered coconut or similar materials. The binder should be a powdered, natural substance, preferably one containing polysaccharide gums. All ingredients are made into a paste and either extruded as a filament, which is formed into a coil, or made into a flat sheet, from which the coils are stamped. Mosquito coils can burn for up to eight hours and contain about 0.25% pyrethrins. To avoid smoke emission, pyrethrin-impregnated mats or chips are also available. These forms are used with an electric vaporizer. Due to past shortages of natural pyrethrum powder, most mosquito coils today contain synthetic pyrethroids.

Due to high costs, the use of pyrethrum insecticides in agriculture has been significantly reduced, especially with the large-scale development of the synthetic organic insecticides. Today, however, pyrethrum is

being used in a number of new ways to control. Pyrethrum's lack of persistence is an additional advantage. To deal with pyrethrum-susceptible pests, it is also being used on larger acreages at relatively low concentrations.

#### What of the Future?

The long term future of natural pyrethrum insecticides is highly dependent on several factors: its cost compared to synthetic insecticides, continuity of supply and the effect of regulatory controls in certain countries. In 1978 and 1979 there was a major shortage of pyrethrum which caused many formulators to switch to less expensive synthetic products. Nearly two decades later, the natural pyrethrum industry has not fully recovered from this major setback.

However, today there is renewed interest in pyrethrum because of its unique properties and general safety. This interest has provided the impetus for East African pyrethrum producers and others to increase their production and processing capacity. Newer plant varieties, capable of higher yields, are

being developed, and the industry is beginning to show signs of recovery.

#### General Reading

Want more information on pyrethrum? Try these sources: *Pyrethrum Flowers—Production, Chemistry, Toxicology and Uses*, Eds. J. E. Casida and G. B. Quistad, Oxford University Press, 1995, and *Formulating Pyrethrum*, The Pyrethrum Bureau, Nakuru, Kenya. ■

#### Coming Next Month:

*The Wax & Polish Market*

*An Update on ISO*

*A Look at Executive Pay*

## High Shear Extracts the Truth From Botanicals

You don't really believe that all botanical extracts are the same, do you? Of course not. And neither do we.

But we *do* believe that our new Cytes™ are superior to any other plant extracts you may have looked at, and we think that after you've looked at them, you'll be a believer, too. Here's why.

First, we don't rely on just a single extraction method; we fractionate plants into three components. Each fractional component has unique, highly specific attributes, tailored for precise functionality. Our ExCytes™ are processed to provide extremely high extract concentrations. Next, our high-

shear fractionation of undamaged cytoplasmic constituents results in our InCytes™. Finally, we derive Phocytes™ by compounding InCytes with phospholipids in a high-shear dispersion.

Second, we use advanced process control systems to ensure that the character of all extracts is uniform, consistent with the traits of the specific plant, and optimally functional.

Third, we select only those plants with superior, defined traits, to provide the most potent extracts available anywhere. We then subject each Cyte to controlled clinical evaluation, to assure that their performance meets or exceeds our

rigorous specifications. To date, we have produced Cytes derived from apple, chamomile (*matricaria*), green tea, licather, hops, kola, lemon balm, and lemon peel. We are constantly developing new Cytes. Call for availability.

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EAST SETAUCKET, NY 11734 USA

tel 516.689.0200

fax 516.689.0205

For more data, Circle 29 on Service Card

**IN THE MATTER OF**  
**United States of America**  
**Patent Application No.**  
**09/341,299 in the name of**  
**VERONICA ROBINSON**

**EXHIBIT VT-3**

TGA

THERAPEUTIC  
GOODS  
ADMINISTRATION

## SURVEILLANCE UNIT

PO Box 100 Woden ACT 2606 Australia  
Telephone: (02) 6232 8640 Facsimile: (02) 6232 8643



Commonwealth Department of  
Health and  
Aged Care

Ms Veronica Townsend.  
Lice Busters International Pty Ltd.  
Unit 5, 1 Townsend Street.  
Malaga. 6062.  
Western Australia.

Dear Ms Townsend.

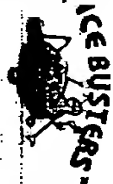
I have received the new label that you forwarded to this office for our opinion. This label has been discussed with our advertising unit and we are satisfied that you are not breaching any Therapeutic Goods Legislation.

Hope this is of assistance to you.

Regards,

Margaret Lane.  
Principal Investigator.  
Surveillance Unit.  
17 September, 2001





Manufactured by:  
**LICE BUSTERS INTERNATIONAL PTY LTD.**  
 Unit 51 Townsend Street, Matagar, WA 6090

FOR  
 EXTERNAL USE  
 ONLY



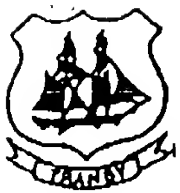
**DIRECTIONS**  
 This product is designed to be worn in the hair during an outbreak of lice. Worn daily it naturally keeps lice away and imparts a fresh herbal aroma that children love, and stops re-infestation. Replace headband within 3 weeks or when effect diminishes. Keep item dry and store below 30°C.

**lice BUSTERS**  
 Regular



**IN THE MATTER OF**  
**United States of America**  
**Patent Application No.**  
**09/341,299 in the name of**  
**VERONICA ROBINSON**

**EXHIBIT VT-4**



TRANBY PRIMARY SCHOOL  
99 Acton Avenue  
RIVERVALE WA 6103  
Telephone : 9277 1642  
Fax : 9277 9983

Principal : Lea Hadley

To whom it may concern:

Up to a short time ago, our school had **been** in the grips of a head lice plague for many months, with frequent reoccurring outbreaks causing the children, staff and parents much distress. Parents were becoming increasingly frustrated at having to pay out quite a lot of money to treat their children's hair, only to often have to repeat the process again and again to no avail. Not only was this a financial drain, but also an emotional one as the children were getting annoyed with the constant checking and treatments they were having to endure. From the school's point of view, the lice plague had presented the added problem of interrupting the children's educational routine when they had to be sent home from school until the infestation was treated.

In early May of this year a product called Lice Busters was brought to our attention and enquiries were made. To cut a long story short, we received samples of the headbands, cap inserts and treatment oil, along with detailed literature describing these products, and it wasn't long before the parents of Tranby Primary School were placing their orders. The feedback we have received from the parents using these products has been all positive, with **many** buying extras for friends and family in other parts of the country. The parents have been very happy with the results using the treatment oil, and the headbands and inserts are also apparently doing their job of prevention. Most of the parents are extremely pleased to have finally found a product that is working on ridding their children's hair of these pesty mites, plus the fact that it is not chemically based and the cost is so accomodating to even the tightest budget. Tranby Primary School is therefore happy to endorse a local product such as Lice Busters that is helping us to help our community with what has been an extremely annoying health problem.

*L. J. Hadley*

Lea Hadley.  
PRINCIPAL.

*M. Pritchard*

Michelle Pritchard.  
PARENT LIAISON OFFICER.  
8th June 1998.

**IN THE MATTER OF**  
**United States of America**  
**Patent Application No.**  
**09/341,299 in the name of**  
**VERONICA ROBINSON**

**EXHIBIT VT-5**



**SCARBOROUGH**  
B E A C H

P H A R M A C Y

ABN 45 866 238 338

12<sup>th</sup> March 2001

**TO WHOM IT MAY CONCERN**

Scarborough Beach Pharmacy has been dealing with Licebusters International for the past six months.

We initially heard of this company and it's Licebuster products through another retailer and have found these products to be an effective deterrent and treatment for the lice problem which is presently plaguing most schools around Australia.

I have no hesitation in recommending the company and its products to other interested parties.

Yours faithfully

**CHRIS WELLS**  
Pharmacist/Proprietor

**IN THE MATTER OF**  
**United States of America**  
**Patent Application No.**  
**09/341,299 in the name of**  
**VERONICA ROBINSON**

**EXHIBIT VT-6**



# Ballajura Optometrists

☎ 9248-1700

Developmental Optometrists  
Contact Lens Consultants  
Optical Dispensers

9248-1722 fax

7<sup>th</sup> December 2001

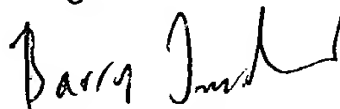
TO WHOM IT MAY CONCERN:

RE: Licebusters

After using a variety of lice treatment products on the market \_\_\_\_\_ and having no success, I was finally put in touch with Licebusters in Malaga. My daughter was provided with an in-house treatment where the nits were removed and her hair cleaned. She was then provided with home treatment products and a scrunchie which she wears all the time.

I found the service and products provided by Licebusters to be of the highest professional nature and I would not hesitate to recommend their products and service.

Kind regards



BARRY TUCKER

**Barry Tucker Dip. Optom (S.A.) MBCO (U.K.)**

Provider Number 2201363J

P O Box 2605 Malaga 6944

Unit 1 – 110 Illawarra Crescent  
Cnr. Marangaroo Drive, Ballajura, 6066

**IN THE MATTER OF**  
**United States of America**  
**Patent Application No.**  
**09/341,299 in the name of**  
**VERONICA ROBINSON**

**EXHIBIT VT-7**



Q-Net Webmail

Veronica this is the  
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From: "Andrew &amp; Gemma Banks"

Reply banksalgs@elsa.net.au

To:

Subject: Testimonial

Date: Sat, 30 Sep 2000 20:53:24 +0800

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Good morning,

I called in to your shop on Friday 29th September  
2000 to buy some more =  
Lice Busters scrunchies.

My husband and I have 4 young children, and have  
had intermittent =  
problems with head lice over the last 18 months.  
We have been using the =  
Robi-Comb religiously, but the problem is that we  
can send the children =  
to school, free of lice, on a Monday morning, and  
have them come home =  
with big fat adult lice that same afternoon. The  
problem is that there =  
are un-treated children at school. The time factor  
for the Robi-Comb was =  
a nuisance too - it took me at least an hour to do all  
four children - =  
plus extra time for my husband and myself as well.  
We needed a =  
preventative measure.

Then I heard about Lice Busters from a Mum at  
school (Janelle at Our =  
Lady's Assumption Primary school, Dianella - Ph.  
9249 1070). Thank God. =20

I bought some scrunchies and cap inserts. Then a bottle of oil and some headbands. On the day I started to use the oil - I sprayed some oil onto the kids' hair and a hair brush - then brushed all their hair thoroughly, and put the long hair into "piggies" and plaits. I couldn't believe my eyes - lice were actually running out of their hair - and the annoying thing was that I had only 2 days before Robi-combed their hair. So we left the hair oily and tied up for 24 hours, and then shampooed and conditioned their hair.

Then I tipped the remainder of the 100ml bottle of Lice Busters oil into a 375ml bottle of detangling spray (a cheap supermarket one - South Pacific Reef Sea Spray Conditioner). Every morning and night when we do the kids hair - we shake the detangling spray bottle, and give the kids hair a thorough spray - especially the nape, and fringes - then brush and plait hair. The girls happily wear their scrunchies and headbands, and our son has cap inserts in his kindy hat.

It has been 4 weeks of this new regime - and not a single new lice! And the big benefit for me - being a busy Mum - is that I haven't had to change any of my habits. We were already using the detangling spray (less whining when I'm brushing hair in a hurry!) - and the initial spray of the concentrated oil to rid the infestation was no different to using the detangling spray. I'm just realising now - how the children are not scratching anymore.

On an ongoing basis - I feel the cost is going to be quite minimal. Your 100ml bottle of oil into a 375ml bottle of detangling spray is going to last a long time.

Thank you so much for a fabulous product. I wish you well,

To whom it may concern,

As a parent of a daughter who gets everything I was very interested to hear about herbal headbands for the prevention of head lice. I cannot treat my daughter with chemical solutions so after having one month off school because of an outbreak I was delighted to try this new product. I am pleased to say that since my daughter has been wearing a Lice Busters Herbal Headband during school hours we have so far managed to avoid getting into the "Lice Cycle" through two outbreaks not only at her school but in her classroom!

I have no hesitation in recommending Lice Busters as a solution to an on going problem. I think it's just great that there is an alternative to chemical solutions.

from a very satisfied parent.

*Elliott*

3204 Albany Hwy  
Aurora, CO

Carole Winkler  
9 Skene Fisher Ave  
Ballyvaughan 6066  
10/11/01

Dear Lice Busters

Just a quick note  
of Thanks about your products.  
Since using the collars and oils  
on my pets (dog, cat & ferrets) My  
problems have now dissappeared.  
I have found not only do these  
products keep the fleas away  
but with my dog the flies do  
not annoy her anymore.

All my pets now  
are alot happier and my ferrets  
also no longer smell as much.

Yours sincerely  
Carole Winkler

**IN THE MATTER OF**  
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**EXHIBIT VT-8**

**LICE BUSTERS** **All Natural Lice Repellant** **A Narooma News Special Report**  
 Available now at  
**NAROOMA TOWN CENTRE PHARMACY**

# Beat head lice the natural way

A completely all natural treatment to rid head lice is now available exclusively from Narooma's Town Centre Pharmacy.

The product by Lice Busters International, is based on natural herbal oils which include pyrethrum, rosemary and citronella.

The Lice Busters Programs repels and protects against head lice.

The head band/cap insert program is designed to repel and combat the life cycle of the head lice.

Adult lice live on the scalp: they suck blood and excrete saliva that can cause irritation.

They lay eggs (nits) which are stuck on to the hair.

The eggs hatch after about seven days and the young nymphs mature rapidly to lay more eggs within 14 days.

The adult lice crawl from head to head and spread rapidly amongst friends.

So even if shampoos or conventional treatments manage to kill all of the adult lice, if any eggs remain, these can hatch out and set up a new infestation in a few weeks time.

Even if all eggs are carefully removed with a nit comb, your child may easily become re-infested from another child.

The Lice Busters Program aims to stop this cycle!

One application left overnight and shampooed off the next morning will treat head lice safely and effectively.

No more fine tooth combs as the natural ingredients dissolve the cement that stick the head lice to the hair.

Then, wear a Lice Busters head band or cap insert.

Wear for at least a few hours each day, particularly during morning and lunch recesses and at other times when close head contact is likely.



\*Lice Busters all natural repellent products are available exclusively from Kellie Fortune at Narooma Town Centre Pharmacy.

This will help protect your child until the lice outbreak is over.

If your child is not infested but is in contact with others who are:

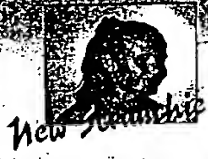
\*Simply wear a head band, scrunchie or cap insert until the outbreak is over, whichever your child prefers.

\*Use a small application of Lice Busters oil or spray each day (although this is not as effective as the head band/cap insert method).

Call in now and get all the answers on the Lice Busters all natural lice repellent exclusively at Narooma Town Centre Pharmacy.

## Don't let Head Lice be a PROBLEM!

**NEW!**  
Mozzie  
Repellent Oil  
now  
available



### All Natural Lice Repellant

**Head Bands, Cap Inserts & now Scrunchies!**

- Safe and Effective • School Uniform Colours • Economical
- Lasts 8 Weeks



**Avoid Head Lice Attack!**



**Wear a head band or cap insert**



- Safe and effective; all natural herbal ingredients.
- Economical: 8 weeks protection against head lice.

Available now at  
**NAROOMA TOWN CENTRE PHARMACY**  
 (At the traffic lights)  
 RICK & TRISH LORD  
 9.5.30 Mon-Fri • 9.30-11.30 Sun  
**Phone: 4476 2056**

**IN THE MATTER OF**  
**United States of America**  
**Patent Application No.**  
**09/341,299 in the name of**  
**VERONICA ROBINSON**

**EXHIBIT VT-9**